



UNIVERSITY OF
TORONTO

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continues to engage
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JANUARY 11, 2011 64th year, number 10

the Bulletin

Two faculty named to Order of Canada

BY AILSA FERGUSON

Two U of T faculty members are among the 54 new appointments to the Order of Canada, this country's highest honour for a lifetime of outstanding achievement. The appointments — 12 officers and 42 members — were announced Dec. 30 by Governor General David Johnston.

University Professor Emeritus **Linda Hutcheon** of English and the Centre for Comparative Literature and Professor **Anthony Lang** of medicine and the Tanz Centre for Research in Neurodegenerative Diseases join 10 other outstanding individuals as officers of the order, the second highest level after companion.

Hutcheon, a specialist in postmodernist culture and critical theory, is cited for her contributions to the fields of literary criticism and theory. A prolific writer, Hutcheon has more than a dozen books to her credit and her studies of postmodernism have begun to shape the way literary scholars and critics see the evolution of contemporary letters in the western tradition.

Hutcheon's achievements have garnered her many awards, among them a Killam Prize for the humanities and the 2010 Molson Prize in the social sciences and humanities. As well, in 2000 she was elected the 117th president of the Modern Languages Association, the third Canadian and first Canadian woman to hold the position.

Lang, Jack Clark Chair for Parkinson's Disease Research at U of T and director of the Movement Disorders Research Centre at Toronto Western Hospital, is cited for his contributions to the field of movement disorders, notably for advancing the therapeutics of Parkinson's disease. His broad-based research program is directed at attempting to solve the "Parkinson puzzle" at many levels, including attempts at understanding the cause or causes, improving the accuracy of diagnosis, preventing and/or slowing the progression and treating the later stages more effectively.

A fellow of the American Academy of Neurology and president of the International Movement Disorder Society, Lang has been the recipient of several awards, including the American Academy of Neurology's Movement Disorders Research Award in 2004 and the Donald Claine Lectureship from the Parkinson Society of Canada in 2008.

Founded in 1967, the Order of Canada is the centerpiece of Canada's honours system and recognizes outstanding achievement and service in various fields of endeavour. Three levels of membership — companion, officer and member — honour people whose accomplishments vary in degree and scope but who have enriched the lives of others and made a difference to this country.

FIRESTORM



This John Edwin Usher painting from 1890 brings to life the Valentine's Day fire that ravaged University College. It will be on display at the U of T Art Centre beginning Jan. 18 as part of a display from the University College collection.

Computer scientist awarded 2010 Steacie Prize

BY SHERRY McGRATTEN

Professor **Aaron Hertzmann** of computer science is winner of the 2010 Steacie Prize for natural sciences — the second consecutive year that a U of T professor has received the prestigious award, recognizing outstanding research carried out in Canada. He is only the second computer scientist to receive the prize since the award's inception in 1964.

"The Steacie Prize is one of the most prestigious forms of recognition possible for a young Canadian scientist," said Professor **Meric Gertler**, dean of the Faculty of Arts and Science. "Even at this relatively early stage in his career, Professor Hertzmann's impact

on computer graphics research is truly remarkable. I predict we will see many more exciting innovations from him in future."

Hertzmann is well-known in the field for his influential work linking three separate research areas within computer science — computer graphics, machine learning and computer vision. By focusing on the application of machine-learning techniques and Bayesian methods, he has resolved a wide range of computer graphics problems. These include computer rendering of images in diverse artistic styles (an area known as non-photorealistic rendering); automated construction of mathematical

... **COMPUTER** ON PAGE 4

First in family program breaking new ground for students

BY CHRIS GARbutt

Being a trailblazer isn't easy and students who are the first in their families to attend university often feel as if everyone else has it all figured out.

For third-year neuroscience student **Natasha Park**, navigating the new experience of being at university was a real challenge, especially in her first year. "I often felt like other students had their parents to turn to for advice but I didn't have that," she said. "Sometimes I would spend hours searching on forums trying to find the answers to my first-year problems."

And while PhD student **Mariam Mashregi** enjoyed her first year, she did find that her family didn't quite appreciate what it meant to be a student at U of T. "My parents could not relate to me in terms of understanding the student lifestyle," she said. "They

expected things to be the same as high school except that I was attending a much larger school and my classes were now downtown."

Both Park and Mashregi are new peer mentors for first-year, first-generation students. Their work is part of an ambitious new tri-campus effort to help other first-generation students make the transition to post-secondary education and to improve the sense of belonging that sometimes eludes them.

"These students should be very proud that they're the first in the family to attend higher education," said **Rahul Bhat**, co-ordinator for the St. George First in the Family program. "It's often a huge source of pride for their whole families."

Chris McGrath, who co-ordinates the genONE program at U of T Mississauga, said research has shown that first-

... **FIRST** ON PAGE 4

LETTER FROM THE EDITOR

Happy 2011!

It's hard to imagine that the Y2K scare is 11 years in the past ... time marches on!

I mention the famed turn-of-the-century panic about computer meltdowns because computer science at U of T is in the spotlight as we commence a new year. In December, Professor **Aaron Hertzmann** of computer science was named winner of the Steacie Prize, one of Canada's most prestigious science prizes. He is only the second computer scientist to be so honoured since the prize was first awarded in 1964 (see page 1).

His award is harbinger of good things to come in 2011 with regard to awards, although I'm not at liberty to share the details yet! Make sure to check back for our Jan. 25 issue.

Hertzmann's work is also notable because it has solved computer graphics problems that affect anyone who plays computer games. Bringing their knowledge to the marketplace is something many computer scientists are keen to do, and Professor **Ron Baecker** regularly gives them a helping hand (see page 6).

Many of us travelled over the holidays and enjoyed the relaxation and the escape from our everyday lives. However,

Yvonne Joseph from the Faculty of Dentistry travels with a purpose in mind (see page 9), as will numerous undergraduate students in the coming year as they combine travel with learning through internationalized course modules (see page 6). They'll gain invaluable international experience, which can only be an asset in today's global village.

Merging the world of today with the more insular past, page 3 takes us to the lieutenant governor's offices for commemoration of the historical value of the building housing the Centre for International Experience on St. George Street (see page 3). International students or those planning to study abroad have the opportunity to set foot in a piece of Toronto's history as they plan their futures.

Here's to broadening experiences for all of us in 2011, whether they look forward or at our past.

All the best for the coming year,

Elaine

the Bulletin

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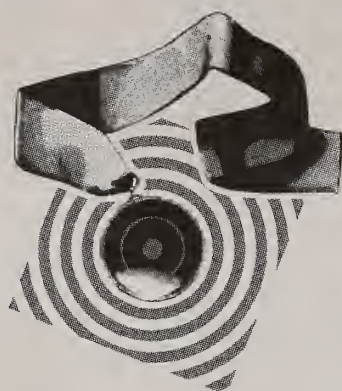
WEBSITE: www.news.utoronto.ca/bulletin.html

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EDITORIAL ENQUIRIES: 416-978-7016 • DISTRIBUTION ENQUIRIES: 416-978-2106

ADVERTISING ENQUIRIES: 416-978-2106 • Display advertising space must be reserved two weeks before publication date. FAX: 416-978-7430.

The top and sidebar art on the front page is composed of photographs taken at the University of Toronto.



AWARDS & HONOURS

FACULTY OF APPLIED SCIENCE & ENGINEERING

Professor **Doug Hooten** of civil engineering has been selected to receive the American Concrete Institute's Arthur R. Anderson Medal. Established in 1972 to honour a past institute president, the award is given for outstanding contributions to the advancement of knowledge of concrete as a construction material. Hooton, who holds the Natural Sciences and Engineering Research Council of Canada/Cement Association of Canada (CAC) Industrial Research Chair in Concrete Durability and Sustainability, will receive the award during the institute's annual spring convention April 3 to 7 in Tampa, Fla.

FACULTY OF ARTS & SCIENCE

Professor **William Trischuk** of physics has been elected a fellow of the American Physical Society, a distinct honour signifying recognition by professional peers. Trischuk was cited for the development of novel particle detectors and their application for precision measurements, including the W boson mass, the tau lepton lifetime and Bs mixing, and for seminal contributions to the development of diamond sensors, a critical technology for next-generation high luminosity colliders. Founded in 1899, the society's mission in part is to be the leading voice for physics and an authoritative source of physics information for the advancement of physics and the benefit of humanity.

ROTMAN SCHOOL OF MANAGEMENT

Professor **John Hull**, Maple Financial Professor of Derivatives and Risk Management, has been selected by the Professional Risk Managers'

International Association (PRMIA) to receive the 2010 PRMIA Higher Standard Award. The award, announced Dec. 10, is given to an individual who has had a significant impact on the global practice of risk management, provided a substantial contribution to the mission of PRMIA and its members and shows an ongoing commitment to the highest standards of the profession. Hull, an internationally recognized authority on derivatives and risk management, has been involved with the association since its inception. PRMIA is a non-profit member-led association with more than 60 chapters and more than 72,000 members worldwide.

FACULTY OF MEDICINE

Rosalind Silverman, a post-doctoral fellow in laboratory medicine and pathobiology, is the second prize winner in the American Society for Cell Biology's Cell Dance contest in the film category. Silverman received the award for *50 Years for 50 Years* during the society's annual conference Dec. 11 to 15 in Philadelphia. Silverman and her twin sister **Lorelei Silverman** of physiology won honourable mention for the best scientific picture for *An Extended Actin Net* in the image category.

LESLIE DAN FACULTY OF PHARMACY

Professor **Reina Bendayan** of pharmaceutical sciences was elected a fellow of the American Association of Pharmaceutical Scientists (AAPS) at the AAPS meeting and exposition Nov. 14 to 18 in New Orleans. Election to fellowship recognizes outstanding contributions that elevate the stature of the pharmaceutical sciences and professional excellence in the field, with the primary criterion of professional competence reflected through scholarly and research contributions. Bendayan was honoured for the many contributions she has made to the field of anti-HIV drug distribution in the brain.

COMPILED BY AILSA FERGUSON

CORRECTION: In our Nov. 25 Issue, Professor **Cheryl Regehr**, vice-provost (academic programs), was given an incorrect title. *The Bulletin* apologizes for this error and for any awkwardness it may have caused.

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Students find food for thought

BY ANJUM NAYYAR

The food hampers may be empty, but for 75 students and some faculty from the Factor-Inwentash Faculty of Social Work, the experience of living on food from a food bank will leave a lasting impact.

The Do the Math/Eat the Math campaign was run by a student-led group that focuses on promoting issues of social justice within the faculty and

Stop Community Food Centre, also took part in the Do the Math challenge. Its objectives included raising awareness that charity is not enough and that policy change and social investments are required of the Ontario government.

"The Do the Math challenge is an online survey and just a quick survey of anyone's monthly expenses ... you put it all in and it tallies up that amount and compares it to the

vegetables or fruit, it's mostly made up of empty carbs and really high in sodium. It was really tasteless stuff. It's basically Kraft dinner, very little protein, only canned beans, etc. The experience really fed into my energy levels and my anticipation of meals. I found that I was drained of energy and had trouble concentrating in class. I was staring at the wall during class either because I was falling asleep or thinking about how hungry I was."

He says he hopes changes can be made across Ontario to improve the lives of those living in poverty.

"What we hope to see is some changes made within the legislation that affect people's ability to have autonomy and choice to access an adequate and nutritious meal."

Dean **Faye Mishna** of the Factor-Inwentash Faculty of Social Work said the exercise is very beneficial.

"I think Eat the Math is a great activity for social workers," Mishna said. "The ability to understand the experience of others is fundamental to our profession. This exercise allows us to be aware that people who do not have the resources for proper nutrition can be detrimentally affected in their daily lives. The ability to access good, nutritious food in a country like Canada should be a basic right as it is the foundation for optimal psychological functioning and emotional health."

For students' blogs on this experience visit: youthdtmc.posterous.com.

Sample Food Hamper Contents (Source: Fort York Food Bank)

Single person:

- 2 boxes Kraft Dinner (or substitute extra rice if gluten-intolerant)
- 3 juice boxes
- 3 single-serving-size scoops dry rice
- 2 small cans soup
- box of dry cereal or 3 packages instant oatmeal
- any 2 of: 175 g tin of tuna, chicken or turkey; small jar peanut butter; 3 eggs

- 2 small cans of tinned vegetables or 1 tin vegetables and 1 fruit
- 1 potato
- 1 onion
- 1 can plain beans or chickpeas or 1 can pork and beans
- 3 granola bars or 3 fruit chews
- 1 quart milk
- 1 loaf bread (or substitute extra rice)

by the Faculty's Graduate Students Association.

The Eat the Math challenge required people to live exclusively off the contents of a food bank hamper for three to seven days. Students also blogged about their experiences.

"We weren't really satisfied with the idea of just giving more canned food to the food bank, more canned tuna and more Kraft dinner," said **Mark Woodnutt**, a social work graduate student. "We wanted to get at the heart of the issue. So we thought why don't we bring this idea to the faculty?"

Woodnutt, who is doing his practicum placement at The

money received by someone living on social assistance and generally there tends to be a pretty drastic gap between those two numbers. Most people on assistance get \$585 a month."

The experience highlighted something many of the students already realized from their classroom and practical experiences.

"As social workers we tend to engage with a lot of issues of poverty and one of the things you come across is that people don't have enough to eat, that hunger is prevalent in our society," said Woodnutt.

"One of the major things I found was the quality of food was not great. There's no fresh

Centre gets vice-regal treatment

BY ELAINE SMITH

As three former lieutenant-governors looked on, Ontario's current lieutenant-governor, David Onley, unveiled a historic plaque Dec. 7 to honour U of T's Centre for International Experience, the only former vice-regal residence in the province still standing.

"The plaque reminds us of the people, places and events that comprise our living heritage," said Onley to the crowd assembled in the Lieutenant-Governor's Suite in the Legislative Building at Queen's Park. "It's quite remarkable that this house still stands today. I am relieved that Cumberland House avoided the seemingly intractable fate of vice-regal residences and lives on as part of the University of Toronto."

Thomas Symons, head of the Ontario Heritage Trust, steward of historical plaques provincially, offered the guests a brief history of the house, which was designed by architect Frederic Cumberland for his family while he was working on University College. Built in 1860, the home served first as a family residence but had multiple uses in the intervening years between the Cumberland family's use and acquisition by U of T in 1923.

Pendarves, as it was originally known, was home to two lieutenant-governors

while Chorley Park, the last vice-regal residence, was being built. Sir John Gibson lived there from 1912 until 1914 and Sir John Hendrie resided in the house before moving to Chorley Park in 1915.

"This house has been part of and witness to more than 150 years of Ontario history," said Symons.

Members of the families of the architect and both resident lieutenant-governors attended the ceremony and expressed their delight at the plaque, which will stand outside the house at 33 St. George St.

Michael Cumberland, the great-great-great-great grandson of the architect, brought his mother and children to the event.

"This is really special because we have a lot of his artifacts still and I love to be able to share this Ontario heritage with my children," he said.

Tony Hendrie, great-nephew of Sir John, said the invitation to the ceremony had taken him by surprise.

"I knew about Chorley Park but I knew nothing about Pendarves-Cumberland House," he said. "I intend to go visit."

"What a wonderful way to tie the past to the future with students arriving from 150 countries," said **Lucy Fromowitz**, assistant vice-president (student life). "The first thing they'll see when they arrive here is the plaque dedicated to our heritage."

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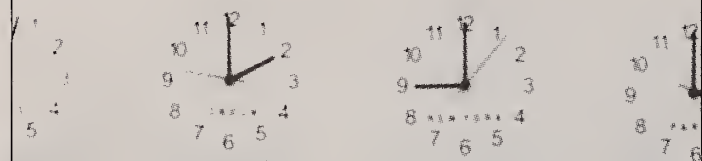
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Computer scientist awarded Steacie Prize

CONTINUED FROM PAGE 1
and computational models of human locomotion for computer animation in film and computer games; estimating the three-dimensional structure of a non-rigid object from a video sequence of that object; and finding new methods for removing the effects of “camera shake” from photographs in digital photography.

“I am fascinated by the simple tasks that we as humans do easily and unthinkingly but are extraordinarily difficult for computers,” Hertzmann said. “I especially focus on things with a visual component.”

His collaborations with

industry include advising Chris Landreth, an Academy Award-winning animator and director, on cutting-edge non-photorealistic animation methods for the short film *The Spine* (2009) and applying his creativity and skill at Pixar Animation Studios, where he has served as a visiting research scientist.

The Department of Computer Science is very proud of Hertzmann’s accomplishments. Professor **Fahiem Bacchus**, acting chair of the department, said: “We’re pleased that Aaron’s significant contributions to the field of computer science and beyond are being recognized with

such an impressive award. Congratulations, Aaron!”

See the video *Optimizing Walking Controllers for Uncertain Inputs and Environments* at www.youtube.com/watch?v=9pGH6-QV-sQ for an example of Hertzmann’s work.

The Steacie Prize, with a value of \$10,000, is awarded annually for exceptional research contributions from a scientist or engineer aged 40 or younger. Winners are selected by a panel appointed by the E.W.R. Steacie Memorial Fund, a private foundation dedicated to the advancement of science and engineering in Canada.

First in family program breaking new ground

CONTINUED FROM PAGE 1
generation students often do not have the same knowledge and understanding that other students naturally bring from past family experience. In response, the Ontario government has developed a \$30-million program to help first-generation students across the province. From this, U of T will use \$1.3 million to develop a mentorship program on each of the three campuses.

On each U of T campus, about 250 first-year, first-generation students will meet regularly in small groups of about 10, together with a peer mentor, beginning this month. The peer mentor will also be available for students who want individual support.

Through mentoring and meetings with other students in similar situations, students can increase their sense of belonging on their campus,

said **Farrah Chanda Aslam**, a mentor and co-ordinator with the U of T Scarborough Leadership Institute and Learning Community for First Generation Students.

“This is an opportunity to build a network of first-in-the-family students, to build a community,” Bhat said.

Students interested in being mentored can contact the program via the website for each individual campus.

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Professor combines longevity, excellence

BY ANJUM NAYYAR

After almost half a century and 32,000 undergraduate students, 269 courses and 13,000 teaching hours later, Professor **Michael Hare** is still inspiring young minds in his economics classes at U of T.

Even after 48 years of teaching, Hare said he still gets anxious before delivering a lecture.

"I always have experienced it right from day one," he said. "What I perceive to be a good lecture is always preceded by a set of nervousness. I know when I've given a good lecture and when I've given a bad lecture. You have an internal feeling."

Hare pointed out that it's the challenge of teaching the subject that keeps him invigorated.

"I enjoy the challenge associated with teaching the courses I offer. Each class is different. I find it exciting in the classroom. Education has a consumption side; it broadens people's visions and opens up new ideas. It opens up discussions and you can never lose that," he said. "It also has what we call in economics a production side in that it increases your abilities to do things and opens doors for professions."

He is proud of all of his courses, but he especially likes teaching ECO 105, a first-year economics course taught in the Medical Sciences Building auditorium to 400 students, some of whom applaud at each lecture.

"It's a topics course. I created it in that form. Twenty-two lectures, 22 topics and each topic involves some development of economic theory. Half of the students are science students and most programs in the faculty are represented."

Hare also created a senior undergraduate course, ECO 360: Economic Growth and Technological Change, which examines the development of capitalism and stresses the importance of technological change and productivity growth.

"How can the study of economics not be exciting? We have a solid theory for economic analysis and we have a vastly changing world which requires significant economic analysis to understand..."

— Professor Michael Hare

Hare joined the university in 1962, after graduate studies at the Massachusetts Institute of Technology. But his association with U of T goes further back, including his years as an undergraduate student here on campus. Hare's three children are also graduates of U of T's Trinity College but he said not one has followed in his footsteps

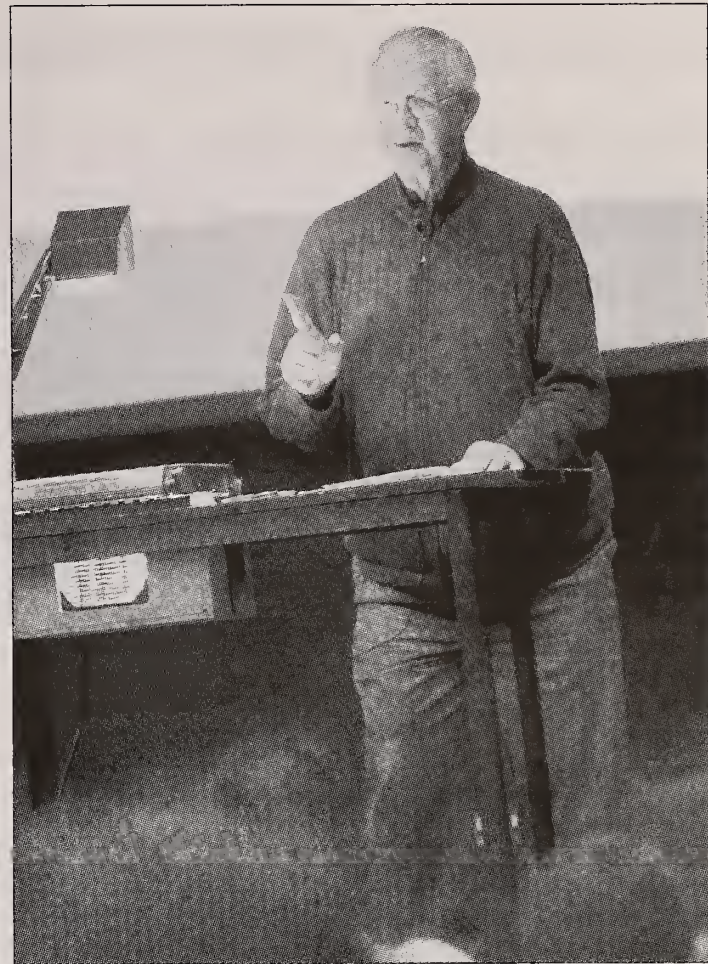
as a professor of economics. He credits his wife, Marion, who died more than four years ago, as "a dedicated and faithful supporter."

During his many years as an economist, he's seen the field change as a result of world events.

"The discipline of economics has grown dramatically since the start of my involvement as an instructor at U of T," said Hare. "Issues have changed, knowledge has increased and the world has been changing, and changing rapidly, since the 1950s. This has required the discipline of economics to change and expand dramatically since 1950. Thus, there has been an ever expanding set of issues and economics has been increasingly on the front page of most newspapers during the last 60 years. These transformations have been fascinating for economists. Our world today is vastly different than the world I knew as a graduate student."

Thirty-seven years ago, Hare inspired another student, **David Naylor**.

"Michael Hare almost certainly holds the Canadian record for most undergraduate students taught in the course of a professorial career," said Naylor. "On a personal note, 37 years ago, I took Economics 102 solely because Professor Hare was such a legendary communicator and as predicted, he held a class of more than 200 students spellbound."



Professor Michael Hare of economics is a veteran of large class lectures after 48 years of teaching.

The University of Toronto is extremely fortunate that some of Mike Hare's talents have been teaching here for nearly five decades. On behalf of multiple generations, I extend our collective thanks and congratulations to this remarkable man."

"I'm very pleased he was in my class and that he enjoyed it," said Hare.

From the first day he taught economics at U of T nearly five decades ago to the present day, 77-year-old Hare said it has been his passion.

"How can the study of economics not be exciting? We

have a solid theory for economic analysis and we have a vastly changing world which requires significant economic analysis to understand and the opportunity to present strategies for improvement. I have not even included the current major economic downturn. The preceding events are why I can maintain an excitement about the courses which I offer each term, each year. Economics is very much alive."

Hare has no plans to slow down; his goals are to teach for 50 years and write a book on the future of capitalism.

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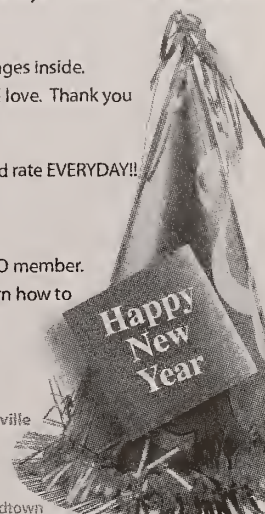
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Computer Shop

University of Toronto

Computer science course teaches entrepreneurship basics

BY KELLY RANKIN

Long before there was a Dragon's Den — the CBC show for aspiring entrepreneurs — Professor **Ron Baecker** of computer science was teaching students the Business of Software.

Back in 1984, after leaving his first start-up company, Human Computing Resources (HCR), Baecker found himself in Provence working on a book about his initiation into entrepreneurship.

Being the consummate teacher, he realized what he really wanted to do was return to U of T and share his experiences with students. In 1986, with the approval of Roger Wolff, then dean of the Faculty of Management, the Business of Software course began.

Since then Baecker, along with sessional instructors **Philip Stern**, an independent management consultant, and **Adrian Ieraci**, business consultant and executive director of the Knowledge Media Design Institute, have taught more than 3,000 students about entrepreneurship. "I have a ball teaching it, it gives me a chance to invite in all sorts of interesting people," Baecker said.

After 25 years, the course remains grounded in the real-life experiences of entrepreneurship. Lectures include a one-hour talk by a guest entrepreneur (Baecker calls

these "living case studies") who shares his or her insights into launching start-up ventures.

Students work in teams and develop their own business plans for start-up companies throughout the course of the semester. During the final lecture, the best plans are selected and teams are given a chance to pitch their ideas to a panel of guest judges comprised of entrepreneurs and venture capital investors.

"This class seems to do as good a job as I've seen in preparing students for running their own software business."

— **Scott Pelton**

Scott Pelton, vice-president of investments for GrowthWorks Capital, and recent panellist in the course, said the Business of Software is a very important course. "We need more entrepreneurs and this class seems to do as good a job as I've seen in preparing students for running their own software business," he said.

Nigel Stokes, a student in the inaugural class and frequent guest of the course, started a company based on a business plan he and his teammates wrote for the course. They sold

the company, giving Stokes enough capital to start other companies, most notably, Data Mirror — which he built to approximately \$60 million in revenue and sold to IBM in 2007. Today, he invests in start-ups, like his recent project AppZero.

"[Baecker's] really about engaging customers, which is the first step to commercialization. Technology companies fail in Canada for one reason and it's not the lack of available capital, they fail because they fail to focus on customers and prospects; people who might use their technology," said Stokes. "You can't build a product without a customer in mind."

Teammates **Daniel Teoh**, **Michael Rubinger** and **Ajay Mehta**, masters' students in the management of innovation program at U of T Mississauga, and students in last semester's class, said the course was very relevant and appreciated Baecker's efforts to keep the course current.

"I don't think any course can be more relevant than Dr. Baecker's," said Teoh. "Our weekly lectures featured a current entrepreneur or [venture capital] investor and as students we had the opportunity to question them on current issues they're facing with their own businesses (and tie it back to basic principles). You can't ask for much more than that in a business course."

New internationalized course modules offered

BY KIM LUKE

Nine new internationalized course modules (ICMs) will be available to students through the Faculty of Arts and Science in 2011.

As part of the faculty's commitment to providing meaningful international experiences to students, the modules enable instructors to enrich existing courses by taking groups of students abroad to experience first-hand the phenomena, cultures, key events or unique natural settings they have been studying in class.

"The quality of the proposals we received this year was excellent," said Professor **Ito Peng**, associate dean (interdisciplinarity and international affairs). "Each year, more departments are coming forward with new ideas to enrich their courses. We were especially pleased by the ways people are finding to ensure the academic impact and benefits of the ICM is experienced not just by the relatively small group travelling abroad but leveraged in innovative ways for the benefit of a larger community of students."

"An increasingly important component to the faculty's educational mission is the goal of promoting our students' understanding of and engagement with the wider world around them, at home and abroad," noted Professor **Meric Gertler**, dean of arts and science. "At a time when local and national spaces are increasingly penetrated by global flows of people, capital and ideas, we have a societal duty to produce graduates who are prepared to participate fully and effectively in this world."

The faculty approved nine of 15 proposals submitted for 2011 and they offer diverse opportunities for students. Anthropology 100, the large

first-year introductory anthropology course, will offer a module during reading week that will see 10 students visiting Bali, then working together on a presentation that they will share with the rest of the 1,240 students on the final day of class. Their presentation will be evaluated as part of their course mark.

At the same time the anthropology students are in Bali, a group of 25 students in Geology 217 will get a close-up look at the Earth's evolution in a unique geologic setting in the Chilean Andes. The rocks and structures they will encounter tell the story of 200 million years of subduction — tectonic plates sliding beneath one another — and associated earthquakes and volcanic activity.

Meanwhile, on the other side of the world, 15 students in NEW 150, Introduction to African Studies, and NEW 250, Century Africa: Challenges and Opportunities, will travel to Ghana to gain practical experience in the multi-faceted and complex nature of the African continent.

Other ICM projects being funded this year are:

- HIS 478/USA 400 Hellhound on my Trail: Living the Blues in the Mississippi Delta (Chicago)
- PCS 460 Contemporary Issues in Peace and Conflict Studies (Bosnia, Kosovo and Serbia)
- INI 437 Experiential Learning in Toronto & the GTA (New York)
- POL 359 Enlarging Europe: The EU and its Applicants (Kosovo — Macedonia)
- ABS 301, ABS 350, HMB 323, HMB 443, NEW 444 Indigenous perspectives on food sustainability and health initiatives (Belize)
- GGR 343 New Paths of Urbanization in China: A Case Study of Chengdu (Chengdu)

Celebrating student arts engagement

BY MARK SEDORE

Students from across U of T's diverse faculties and programs joined staff and faculty recently to celebrate student engagement and involvement in the arts. The winners of the first Student Awards for Engagement in the Arts were recognized for their accomplishments in everything from dance to creative writing to stage production.

In 2010, the University of Toronto Arts Council created the awards to recognize those U of T students — undergraduates and graduates — who are leaders in the arts community on campus, doing outstanding work outside the classroom, regardless of their academic affiliation.

"The students at our university play leading roles in all aspects of our campuses, not least as leaders of the arts community," said Professor **Jill Matus**, vice-provost (students). "Thanks to them, arts engagement on our campuses is

thriving. The winners of these awards have not only contributed to academic life, but also to the vibrant arts events and installations on our campuses and to the overall experiences of their fellow students."

Thirteen students were honoured with the award in 2010:

"Thanks to them, arts engagement on our campus is thriving."

— **Professor Jill Matus**

Stephanie Azarello (visual art); **Julian Cervello** (drama); **Jennifer Chan** (art & culture); **Taryn Davis** (performance art); **Monika Dembowy** (stage production); **Sarah Harris** (dance); **Bodgan Luca** (visual art); **Andrew McEwan** (creative writing); **Rebecca Noone** (visual art); **Matthew Poot** (music); **Tharmila Rajasingam** (art galleries &

exhibits); **Mary Scourboutakos** (writing & music); and **Janet Sung** (music).

Among the qualifications for receiving an Engagement in the Arts Award is that students volunteer their time and that the work they undertake is not for an academic program or work undertaken in a course. The focus of the awards is therefore primarily — though not exclusively — on those many students across our campuses who use the arts to enrich the lives of those around them but who might nevertheless be in a non-arts related discipline of study.

Nominations for the Arts Council Student Awards for Engagement in the Arts are now open for 2010-11. The deadline is May 6, 2011 and more information and forms can be found at: www.arts.utoronto.ca. The Arts Council welcomes nominations from all faculty and staff members who work with students involved, in any capacity, with the arts at U of T.



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for tickets, www.vicu.utoronto.ca

Honorary degree to be conferred upon Monte Hummel, followed by a public lecture. Mr. Hummel will then join John Carrington, Director of Kinross Gold Corp. and Randall Oliphant, Executive Chairman of New Gold Inc. for a panel discussion to be moderated by Ingrid Stefanovic, Professor of Philosophy, U of T.

Research reveals how flying fish got their wings

BY ANDREW WESTOLL

In a new study that would have made Rudyard Kipling proud, a UTSC graduate student has provided the most definitive answer yet to the curious question, How did flying fish get their wings?

Eric Lewallen, a PhD student in professor **Nathan Lovejoy's** ecology and evolutionary biology lab at UTSC, is the lead author on the first molecular study of genetic relatedness among species of flying fish. Appearing in the *Biological Journal of the Linnean Society*, Lewallen's paper confirms what scientists have long hypothesized — that the wide variety of "flying" strategies found in fish around the world are all the result of a single evolutionary chain of events.

"Our results show that flying fish are monophyletic, which means they all share a common ancestor," said Lewallen. "This suggests that true gliding behaviour in fish evolved just once and all the modifications

we see today can be traced back to that one event."

There are approximately 50 species of flying fish to be found in the tropical and subtropical regions of the Pacific, Atlantic and Indian oceans. Their "wings" are really just enlarged fins, accompanied by specialized muscles, which together allow them to burst out of the water and glide above the ocean surface for short periods of time.

Some species have two pectoral wings, while others have two pectoral and two pelvic wings. The two-winged species can exit the water quickly and usually glide in a straight line. Four-winged species can glide for hundreds of metres at a time and can even manoeuvre in mid-air to change direction.

Scientists believe fish evolved various gliding abilities in order to evade specific predators such as tunas, dolphins and seabirds.

Over the last few years, Lewallen has had his fair share of adventures while collecting his fish specimens. Due to



MICHAEL WOODRUFF

Flying fish have enlarged fins and specialized muscles that allow them to glide above the water.

the high cost of conducting research on the high seas, he has often worked aboard boats operated by the U. S. National Oceanic and Atmospheric Administration (NOAA) in return for the opportunity to collect specimens. By day, he worked as an independent marine mammal observer for NOAA studies. By night, he would catch his flying fish using spotlights and dipnets. "The shocking part,"

Lewallen said, "is that flying fishes are so abundant — they're found in every major tropical ocean — yet many basic questions regarding their ecology and evolution remain unanswered." Lewallen's paper, which will serve as the first chapter of his PhD dissertation at UTSC, provides an exciting foundation for future studies involving open ocean organisms.

"There are many complex questions I would like to address

regarding these creatures and their habitats," he said. "But we've got to lay some of the groundwork first."

Lewallen's work provides further evidence of UTSC's emerging leadership in the field of conservation biology. Noted Lovejoy, "The great success of Eric's study is that it highlights UTSC's growing strength in field biology, graduate research and international collaborative science."

Researcher discovers way to zip away chronic pain

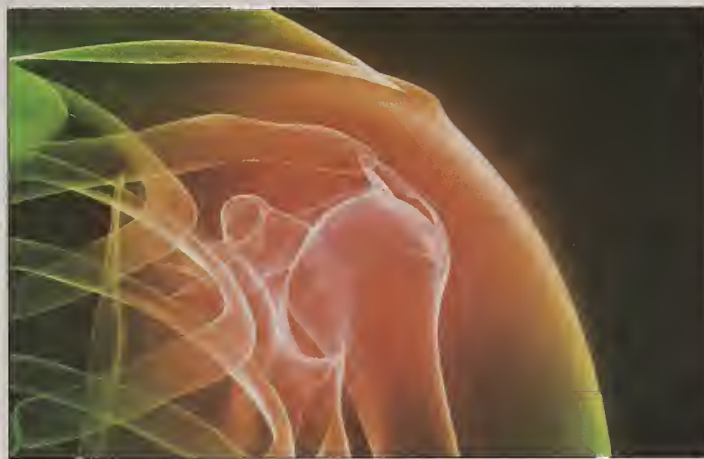
BY PAUL CANTIN

Research from U of T suggests that a peptide inhibitor called ZIP could be crucial in zipping away some kinds of chronic pain.

The new research, led by Professor **Min Zhuo** of physiology and published in the current edition of the journal *Science*, explores the role that the protein kinase M zeta (PKM ζ) plays in storing "memories" of pain and therefore enhancing the sensation of pain. Blocking the effect of PKM ζ through the use of a selective inhibitor called ζ -pseudosubstrate inhibitory peptide — or ZIP — blocked behavioural sensitization and nerve injury related to chronic pain.

Normal pain or physiological pain is an important warning signal to avoid potentially dangerous situations or environments. It is brief, and short lasting. Chronic pain is different, as it persists for weeks, month or years due to spontaneous firing or overexcited pain-related neurons.

"What makes chronic pain difficult to treat is that these painful signals trigger long-term plastic changes in different cortical areas and form permanent bad 'memory.' It explains why the treatment of chronic pain in areas like the spinal cord is often insufficient



A representation of an inflamed joint.

or ineffective," said Zhuo, Canada Research Chair in Pain and Cognition.

Most previous studies have focused on signalling proteins that trigger these plastic changes, while few have addressed the maintenance of plastic changes related to chronic pain. Zhuo and his colleagues, Professors Bong-Kiun Kaang at the Seoul National University and Graham Collingridge at Bristol University, turned to PKM ζ because of its well-established role as a memory storage molecule in two areas of the brain crucial for sensory and taste memory: the hippocampus and the neocortex.

The forebrain region known as the anterior cingulate cortex (ACC) is a centre of a different form of pain — chronic pain or psychogenic (social) pain. Zhuo calls ACC the area

where we experience "the unpleasantness of pain."

"Injury caused by peripheral inflammation, nerve ligation or amputation causes long-term enhancement of neuronal activity in the ACC. However, the question of what molecule maintains these painful changes has been unclear," he said.

Zhuo and his collaborators found that PKM ζ was indeed activated in the ACC when subjects were experiencing peripheral nerve injury. That suggests that PKM ζ can be a therapeutic target for the treatment of pain and the use of ZIP successfully muted chronic pain.

"This finding opens up a new area for pain researchers and our hope is it will yield new strategies to assist people who struggle daily with the challenges of chronic pain," Zhuo said.

Toronto's middle-income neighbourhoods disappearing

BY APRIL KEMICK

If current trends continue, the city of Toronto will eventually be sharply divided into a city of wealthy neighbourhoods and poor neighbourhoods with very few middle-income neighbourhoods. This is the conclusion of a new report released today by the Cities Centre, written by Professor **David Hulchanski** with the support of a research team from the University of Toronto and St. Christopher House.

In 2007, the Cities Centre released a report on the Three Cities in Toronto, using data from the 1970s to 2001. The new report uses 2006 census data to update the trends identified in that earlier report and shows long-term patterns are continuing.

Among the report's key findings:

- four per cent of neighbourhoods that were middle-income in 2001 became part of the group of increasingly affluent neighbourhoods that the Cities Centre calls City #1
- seven per cent of formerly middle-income neighbourhoods lost ground to become part of the group of neighbourhoods with declining incomes known as City #3
- if this trend continues, by 2025, City #1 will consist of about 30 per cent of all Toronto's neighbourhoods,

City #3 will cover 60 per cent of the city and the formerly middle-income neighbourhoods (City #2) will make up the remaining 10 per cent.

"The suburban municipalities around Toronto are subject to the same trends. This is not a 416 versus 905 problem," said Hulchanski. "The middle-income group throughout the region is shrinking, resulting in fewer middle-income neighbourhoods throughout the Toronto region. Although there are more middle-income neighbourhoods in the 905 region to begin with, the number is steadily decreasing and has done so since 1970, while the numbers of low-income neighbourhoods are steadily rising. Twenty per cent of 905-region neighbourhoods are now low income, compared with none in the 1970s."

The three groupings are defined by the average individual income of residents of each census tract in the city. In the neighbourhoods of City #1, the average income is 20 per cent or more above the average individual income for the census metropolitan area as a whole. In City #2, the average income is within 20 per cent above or below the average. In City #3, the average income is 20 per cent or more below the average.

The full report is available at www.NeighbourhoodChange.ca.



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Between Jerusalem and Tel Aviv: Rabin's Memorials and the Discourse of National Identity in Israel

The Andrea and Charles Bronfman Lecture

Thursday, January 20, 2011 at 5:30 p.m. - Free Admission
Vivian and David Campbell Conference Facility
Munk School of Global Affairs
1 Devonshire Place

S P E A K E R

Professor Vered Vinitzky-Seroussi

Department of Sociology and Anthropology and
Vice Dean of the Faculty of Social Science
at the Hebrew University of Jerusalem
Faculty Fellow of the Center for Cultural Sociology, Yale University

While Tel Aviv commemorated the assassination of Israeli Prime Minister Yitzhak Rabin, Jerusalem's symbolic response was ambivalent. Their reactions define two contrasting national identities that reflect the socio-political duality of Israeli Jewish society. The lecture will discuss mnemonic practices with regards to the relationship between Jerusalem and Tel Aviv. Professor Vinitzky-Seroussi is the author of several books, including *Yitzhak Rabin's Assassination and the Dilemmas of Commemoration*.

For more information, contact Sylvia Adler at 416.978.3347 or
sylvia.adler@utoronto.ca.

If you require an accommodation due to a disability, contact us by
January 13, 2011. We will work with you to make arrangements.

CALL FOR NOMINATIONS ACADEMIC BOARD OF THE GOVERNING COUNCIL

Nominations Open:

Friday, January 7, 2011 at 12:00 noon

Nominations Close:

Friday, January 21, 2011 at 5:00 p.m.

Positions Available:

Teaching Staff and Librarians

3-year term from July 1, 2011 to June 30, 2014:

- Applied Science and Engineering: 1 seat
- Arts and Science: 4 seats
- Information: 1 seat
- Law: 1 seat
- Medicine: 4 seats
- Nursing: 1 seat
- OISE: 1 seat
- UTM: 1 seat
- UTSC: 1 seat
- Librarians: 1 seat

By-Election (February 1, 2011 to June 30, 2013)

- Medicine: 1 seat

NOTE: No more than one teaching staff member may be elected to the Academic Board from any one department of multi-departmental faculties.

Nomination Forms will be available beginning

12:00 noon, Friday, January 7, 2011 at:

- www.governingcouncil.utoronto.ca/elections.htm
- Office of the Governing Council
Room 106, Simcoe Hall,
27 King's College Circle, Toronto, Ontario



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Work of the Academic Board:

The Academic Board of the Governing Council is composed of 122 members, 50 of whom are elected teaching staff.

The Board's responsibilities include approving:

- Admissions and awards policies;
- Establishment of new academic programs;
- Establishment, termination or restructuring of academic units;
- Academic appointments policy;
- Budget guidelines and annual budgets;
- Capital plans and projects;
- Curriculum and academic regulations;
- Academic discipline; and
- Research policy.

The membership of the Academic Board should reflect the diversity of the University. Nominations are encouraged from a wide variety of individuals.

Questions?

Please contact:

Chief Returning Officer at:
anwar.kazimi@utoronto.ca or 416-978-8427
or
Deputy Returning Officer
maeyu.tan@utoronto.ca or 416-978-8794

Further information:

Please consult the elections website for more information and review the *Election Guidelines 2011* at:

www.governingcouncil.utoronto.ca/elections.htm

CALL FOR NOMINATIONS GOVERNING COUNCIL

Nominations Open:

Friday, January 7, 2011 at 12:00 noon

Nominations Close:

Friday, January 21, 2011 at 5:00 p.m.

Positions Available:

8 Student Seats

1-year term from July 1, 2011 to June 30, 2012:

- 4 full-time undergraduate students
- 2 part-time undergraduate students
- 2 graduate students

3 Teaching Staff Seats

3-year term from July 1, 2011 to June 30, 2014:

- University of Toronto Mississauga – 1 teaching staff vacancy
- John H. Daniels Faculty of Architecture, Landscape, and Design, Joseph L. Rotman School of Management, Faculty of Forestry, Faculty of Information, Faculty of Law, Faculty of Music and the Factor-Inwentash Faculty of Social Work – 1 teaching staff vacancy
- Ontario Institute for Studies in Education (OISE) – 1 teaching staff vacancy

Nomination Forms will be available beginning

12:00 noon, Friday, January 7, 2011 at:

- www.governingcouncil.utoronto.ca/elections.htm
- Office of the Governing Council
Room 106, Simcoe Hall,
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Work of the Governing Council:

The Governing Council is composed of 50 members: 25 members from within the internal University community, including administrative staff, teaching staff, and students, and 25 members external to the University, including alumni and government appointees.

As the University of Toronto's senior governing body, the Governing Council oversees the University's academic, business, and student affairs. Decisions approved by the Governing Council affect all members of the University community.

Council and its Boards are responsible for:

- Providing guidance on the University's long-term strategic direction;
- Advising on and approving financial policies, and approving the annual operating budget and audited financial statements;
- Oversight of human resources policies;
- Reviewing and approving institutional master plans and major capital projects, and monitoring project implementation;
- Academic quality; and
- Student experience.

The membership of the Governing Council should reflect the diversity of the University. Nominations are encouraged from a wide variety of individuals.

Questions?

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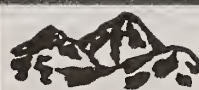
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Joseph's volunteer work has teeth

BY ANJUM NAYYAR

As the plane touches down in Guatemala, Yvonne Joseph hopes the supplies she has packed in her suitcase will be enough to provide free emergency dental care to the underprivileged communities here.

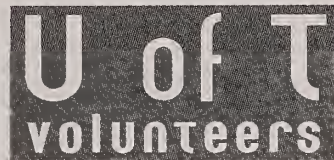
For the last three years, Joseph, a certified dental assistant and team leader in the orthodontic department at the Faculty of Dentistry, takes one to two weeks of her vacation time to travel to rural parts of Guatemala to perform oral hygiene services for the poor. This, despite not knowing a word of Spanish or having any prior knowledge of Guatemala.

She volunteers through Health Outreach, a charitable non-profit organization dedicated to providing health services and public health.

"My work is mainly chair-side, assisting the hygienists with their cleaning, sealants

and oral hygiene because the patients really lack that a lot."

Joseph arrives knowing that she and the other 20 team members will make a real difference. With few social and medical programs available for children there, many have never seen a dentist, except maybe in emergency situations, since the nearest



dentists are hours away in the city. Joseph said many of the children have never used a toothbrush like the ones her team hands out. Oral hygiene is virtually non-existent.

"The work that we do is relieving pain, extracting infected teeth and silver fillings. We have a team of hygienists and what we do is work with younger kids

to teach them proper hygiene so that they can avoid going through the experience that older ones are going through right now."

For Joseph, the experience is filled with all the extremes that might be found in a dental textbook.

"We see a lot of abscessed teeth and those people require penicillin to subdue the abscesses before the teeth are extracted. We see everything that you would only see on a street person here. The people there are so poor they just can't afford care. We see very rampant decay in children. Some older people have even used ordinary pliers on themselves to get rid of the pain. So people walk miles to come to our clinic. We see about 100 patients a day and some days we see even more."

The team operates out of small clinics in rural communities. She said it takes an



Yvonne Joseph from the Faculty of Dentistry (left) travels to Guatemala during her vacation to bring oral hygiene to rural areas.

hour drive each day from their camp to go to the day's clinic site. The temporary dental clinic usually has one or two dental units, a sterilization area, a generator and a permanent water supply. Running water and electricity have been available on most occasions, although it's not a given.

The youngest person she's seen at the clinics has been three years old and the oldest

has been about 90, a blind man who had come to the clinic all alone just to have some tooth extractions done. Joseph said her goal is to be compassionate and help those in need.

"You can see the results of your work when you go back each year," she said. "They are following the advice you've given. You see the smiles on their faces and how thankful they are."

COURTESY OF YVONNE JOSEPH

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- **Psychological Treatments for Anxiety Disorders:** Dr. Neil Rector, Director, Mood and Anxiety Treatment and Research Program
- **Obsessive Compulsive Disorder and Related Disorders:** What Are They? Dr. Peggy Richter, Director, Clinic for OCD & Related Disorders
- **Hoarding and other Anxiety Disorders in the Elderly:** Dr. Carole Cohen, Physician, Psychiatry

Moderator: Dr. Anthony Levitt, Psychiatrist-In-Chief, Sunnybrook Health Sciences Centre

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Admiral Road-Annex. One-bedroom apartment, third floor of quiet house of retired professor. Wooden beams, skylight, A/C, about 400 sq. ft. Common entrance, 10 minutes on foot from U of T. One person only. No pets. \$1,200 per month includes utilities, cable, Internet, furnished/unfurnished. Available immediately on one-year lease. 416-924-8976. Leave message.

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Dr. Neil Pilkington (Psychologist). Assessment and individual, couples and group cognitive-behaviour therapy for: anxiety/phobias, depression/low self-esteem, stress and anger management, couples issues and sexual identity/orientation concerns. Staff/faculty healthcare benefits provide full coverage. Morning, afternoon and evening appointments. Downtown/TTC. 416-977-5666. Email dr.neil.pilkington@rogers.com

Psychotherapy for personal and relationship issues. Individual, group and couple therapy. U of T extended health plan provides coverage. For a consultation call Dr. Heather A. White, Psychologist, 416-535-9432, 140 Albany Avenue (Bathurst/Bloor). drhwhite@rogers.com

Evelyn Sommers, PhD, Psychologist, provides psychotherapy and counselling for individuals and couples from age 17. Covered under U of T benefits. Yonge/Bloor. Visit www.ekslibris.ca; call 416-413-1098.

Individual psychotherapy for adults. Evening hours available. Extended benefits coverage for U of T staff. Dr. Paula Gardner, Registered Psychologist, 114 Maitland St. (Wellesley and Jarvis). 416-570-2957.

Psychoanalysis & psychoanalytic psychotherapy for adolescents, adults, couples. U of T extended health benefits provide coverage. Dr. Klaus Wiedermann, Registered Psychologist, 1033 Bay St., ste. 204, tel: 416-962-6671.

Dr. Cindy Wahler, Registered Psychologist. Yonge/St. Clair area. Individual and couple psychotherapy. Depression, relationship difficulties, women's issues, health issues, self-esteem. U of T extended healthcare plan covers psychological services. 416-961-0899. cwahler@sympatico.ca

Sam Minsky, PhD (Registered Psychologist). Individual and couple psychotherapy and counselling covered under U of T extended health plan. Close to downtown campus. 647-209-9516. sam.minsky@sympatico.ca

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THE UNIVERSITY OF ST. MICHAEL'S COLLEGE
in the University of Toronto

invites applications for the position of
PRINCIPAL OF ST. MICHAEL'S COLLEGE

St. Michael's College is the arts and science college of the University of St. Michael's College, one of Canada's leading English-speaking Catholic universities, and one of three federated universities within the University of Toronto. The Principal is the chief academic officer of the College and chairperson of the College Council, reporting to the President of the University of St. Michael's College and to the Collegium.

Candidates for the Principalship are expected to currently hold a tenured teaching appointment or senior university position at the University of Toronto, to have established an excellent scholarly record in teaching and research, and to have strong administrative qualifications. The appointment will be for an initial term of five years, commencing July 1, 2011.

Interested candidates are invited to contact the Office of the President of the University of St. Michael's College for further information. Applications must be submitted not later than **Friday, 28 January, 2011 to:**

**The Chairman,
Search Committee for the
Principal of St. Michael's College
Office of the President
University of St. Michael's College
81 St Mary Street
Toronto, Ontario M5S 1J4**



LECTURES

Thomas Middleton, Theatre and the Publicity of Space.

Thursday, January 13
Prof. Paul Yachnin, McGill University. 115 Old Victoria College Building. 4 p.m. *Reformation & Renaissance Studies and Toronto Renaissance & Reformation Colloquium*

The Achilles' Heel for Cancer? Improving Outcomes by Inducing Apoptosis More Efficiently.

Sunday, January 16
Suzanne Cory, vice-chancellor's fellow, University of Melbourne. Auditorium, Medical Sciences Building. 3 p.m. *Royal Canadian Institute*

Social Networks Offline.

Tuesday, January 18
Prof. Nicholas Christakis, Harvard University. 1180 Bahen Centre for Information Technology. 11 a.m. *Computer Science*

Can Sequestration of Carbon Dioxide in Deep Geological Formulations Help Solve the Global Warming Problem?

Wednesday, January 19
Prof. Sally Benson, Stanford University; Lectures at the Leading Edge series. 116 Wallberg Building. 12:30 p.m. *Chemical Engineering & Applied Chemistry*

Between Jerusalem and Tel Aviv: Rabin's Memorials and the Discourse of National Identity in Israel.

Thursday, January 20
Prof. Vered Vinitzky-Seroussi, Yale University; Andrea & Charles Bronfman Lecture. Vivian & David Campbell Conference Facility, Munk School of Global Affairs. 5:30 p.m. *Munk School of Global Affairs*

Forensic Taphonomy: Processes of Decomposition Mummification.

Sunday, January 23
Prof. Shari Forbes, University of Ontario Institute of Technology. Auditorium,

Medical Sciences Building. 3 p.m. *Royal Canadian Institute*

COLLOQUIA

The Life of a Natural History Collection in the Enlightenment.

Wednesday, January 19
Prof. Mary Terrall, University of California, Los Angeles. 323 Old Victoria College Building. 4 p.m. *History & Philosophy of Science & Technology*

How to Get Your Research Ethics Board Accredited.

Wednesday, January 26
Prof. Barry Brown, chair, research ethics board, Veritas; brown bag research ethics discussion. Room 2015, Russell Street site, Centre for Addiction & Mental Health, 33 Russell St. Noon. *Addiction & Mental Health*

SEMINARS

What Does the Clinical Study of Dementia Teach Us About the Lifespan?

Thursday, January 13
Prof. Tiffany Chow, medicine and psychiatry. Ste. 106, 222 College St. Noon to 1:30 p.m. *Life Course & Aging*

Innovation Takes Leadership: Opportunities for Canada's Healthcare System.

Monday, January 17
Prof. Kellie Leitch, University of Western Ontario. 2172 Medical Sciences Building. 4 p.m. *Laboratory Medicine & Pathobiology*

Making (A) Difference: The Political Geography of Ethno-Specific Organizing and Social Service Provision in Toronto's HIV/AIDS Sector.

Wednesday, January 19
John Paul Catungal, doctoral fellow, comparative program on health and society. 208N Munk School of Global Affairs. 10 a.m. to noon. Registration: www.utoronto.ca/cphs/. *Comparative Program on Health & Society*

Examining Success of Communication Strategies Employed by Formal Caregivers Assisting Individuals With Moderate to Severe Alzheimer's Disease During Activities of Daily Life.

Wednesday, January 19
Rozanne Wilson, speech-language therapy, speaker; Prof. Monique Gignac, Dalla Lana School of Public Health, discussant; Emily King, mechanical and industrial engineering

(moderator). 412 Health Sciences Building 3 p.m. *Health Care, Technology & Place*

Samizdat: Material Texts and Extra-Gutenberg Publics.

Thursday, January 20
Prof. Ann Komaromi, Centre for Comparative Literature. 208N Munk School of Global Affairs. 4:15 to 7 p.m. *Toronto Centre for the Book and Study of the United States*

The U.S. Supreme Court's Sexual Revolution: Sex, Marriage and Reproduction From Griswold to Roe.

Friday, January 21
Prof. Marc Stein, York University. 208N Munk School of Global Affairs. 2 to 4 p.m. *Study of the United States, Sexual Diversity Studies and Law*

Stress Management in the Tumour Cell Workplace.

Monday, January 24
Prof. Poul Sorensen, University of British Columbia. 2172 Medical Sciences Building. 4 p.m. *Laboratory Medicine & Pathobiology*

Blurring the Line: Illicit Leisure and the Consumption of Pleasure in the Detroit-Windsor Borderland, 1945-1960.

Wednesday, January 26
Holly Karibo, doctoral candidate, history; CSUS graduate student workshop series. 208N Munk School of Global Affairs. 4 to 6 p.m. *Study of the United States*

MUSIC

FACULTY OF MUSIC EDWARD JOHNSTON BUILDING Voice Performance Class.

Tuesday, January 11
Jim and Charlotte Norcop Prize in Song winner's recital. Walter Hall. 12:10 p.m.

Tuesday, January 18
Handel's *Samson*: Oratorio Ensembles class. Walter Hall. 12:10 to 2 p.m.

Jazz Concerts
Wednesdays, January 12 and 19 and Thursday, January 20
Small jazz ensembles. Walter Hall. 7:30 p.m.

Tuesday, January 18
Jazz Faculty Ensemble. Walter Hall. 7:30 p.m. Tickets \$25, students and seniors \$15.

Thursdays at Noon.
Thursday, January 20

Baroque Bravura: Lorna MacDonald, soprano; Gillian MacKay, trumpet; Lydia Wong, piano. Walter Hall. 12:10 p.m.

New Music Festival.

Sunday, January 23
The Student Composer Collective: a staged presentation of original opera scenes created by student composers. MacMillan Theatre. 2:30 p.m.

Monday, January 24

Multimedia event: new audiovisual and electronic works and installations. Walter Hall. 7:30 p.m.

Tuesday, January 25

Composers' forum with Chen Yi, an award-winning composer whose style distills Chinese and western traditional music to form abstract canvases of sound. Walter Hall. Noon.

Wednesday, January 26

Keith Kirchoff lecture and presentation: acclaimed American pianist discusses his experiences with new music. Walter Hall. Noon.

Keith Kirchoff in concert: new works for piano and live electronics, including music by Chen Yi and world premieres of the winning works from the Keith Kirchoff-U of T International Composition Competition. Walter Hall. 7:30 p.m.

PLAYS & READINGS

Dirty Rotten Scoundrels.

Friday and Saturday, January 14 and January 15; Wednesday to Saturday, January 19 to January 29
Based on the film *Dirty Rotten Scoundrels*; directed by Jeremy Hutton. Hart House Theatre production. Hart House Theatre. Performances at 8 p.m., Saturday matinee Jan. 29, 2 p.m. Tickets \$25, students and seniors \$15; students \$10 Wednesdays.

Witches and Bitches.

Thursday to Saturday, January 20 to January 22; Tuesday to Saturday, January 25 to January 29
By William Shakespeare and Friends, compiled and adapted by Patrick Young; directed by Kelly Straughan. Theatre Erindale production. Erindale Studio Theatre, U of T Mississauga. Fridays and Saturdays, 8 p.m.; weeknights 7:30 p.m. Tickets \$15, students and seniors \$10. Box office: 905-569-4369; www.theatreerindale.com.

LECTURES

THOMAS FISHER RARE BOOK LIBRARY

Through Foreign Latitudes and Unknown Tomorrows: 300 Years of Ukrainian Émigré Political Culture. To January 14

This exhibition draws on the library's collections of Ucrainica — books, maps, documents, photographs, etc. — to situate Ukraine, to illustrate the diversity of its peoples and to show the depth of Ukrainian political activity abroad; curated by Ksenya Kiebuszinski. Hours: Monday to Wednesday and Friday, 9 a.m. to 5 p.m.; Thursday 9 a.m. to 8 p.m.

E.J. PRATT LIBRARY VICTORIA UNIVERSITY

VIC 175: Making History, 1836-2011. To January 14

An exhibition to inaugurate Victoria University's 175th anniversary celebration; archival photographs, memorabilia and printed materials illustrating Vic's history and archives. Hours: Monday to Friday, 8:30 a.m. to 11 p.m.; Saturday and Sunday, 10 a.m. to 11 p.m.

U OF T ART CENTRE UNIVERSITY COLLEGE

January 18 to March 19 The University College Collection: Great Art for a Great University.

Created largely through the generosity of donors over many generations, the University College collection comprises some 500 works of art, ranging in date from the earliest years of the college to the present.

North Korean Images at Utopia's Edge.

The exhibition spans three decades and features 24 wood block prints from the Nicholas Bonner Collection, offering a fascinating picture of North Korean conceptions of daily life and work, family and "Fatherland." Hours: Tuesday to Friday, noon to 5 p.m.; Saturday, noon to 4 p.m.

DORIS MCCARTHY GALLERY U OF T SCARBOROUGH

Inbetween. January 19 to February 20
Several artists examine the conversations of physical and psychological space, investigating the places and spaces in which lives are played out. Gallery hours: Wednesday to Friday, 10 a.m. to 4 p.m.; Saturday, noon to 5 p.m.

SEARCH COMMITTEES

Chair, Department of Biology, U of T Mississauga

A search committee has been established to recommend a chair of the Department of Biology at the University of Toronto Mississauga effective July 1. Members are: Professors Amy Mullin, interim vice-principal (academic) and dean, UTM (chair); Berry Smith, vice-dean (students), School of Graduate Studies; Danton O'Day, Sasa Stefanovic and Helene Wagner, biology, UTM; and Mary Lou Smith, psychology, UTM; and Fiona Rawle, lecturer, biology, UTM; Yen Du, undergraduate adviser, biology, UTM; and Lisa Robertson, graduate student, UTM.

The committee would appreciate receiving nominations and/or comments from interested members of the university community by Jan. 14. These should be submitted to Professor Amy Mullin, interim vice-principal (academic) and dean, Room 3200H, William G. Davis Building, U of T Mississauga; fax, 905-828-3979, email, amy.mullin@utoronto.ca.

Chair, Department of Political Science, U of T Mississauga

A search committee has been established to recommend a chair of the Department of Political Science at the University of Toronto Mississauga effective July 1. Members are: Professors Amy Mullin, interim vice-principal (academic) and dean, UTM (chair); David Cameron, graduate chair, political science, St. George campus; David Wolfe, Ana Maria Bejarano, Mark Lippincott and Peter Loewen, political science, UTM; and Jan Noel, historical studies, UTM; and Norma Dotto, academic counsellor, political science, UTM; and Stephanie Marotta, undergraduate student, UTM.

The committee would appreciate receiving nominations and/or comments from interested members of the university community by Jan. 14. These should be submitted to Professor Amy Mullin, interim vice-principal (academic) and dean, Room 3200H, William G. Davis Building, U of T Mississauga; fax, 905-828-3979, email, amy.mullin@utoronto.ca.

Principal, St. Michael's College

In accordance with the bylaws of the University of St. Michael's College (USMC) and the terms of the Federation Framework Agreement, President Anne Anderson has established a search committee to recommend the appointment of a principal of St. Michael's College (SMC). Professor Mark McGowan will complete his final term as principal June 30. Members are: Professors Anne Anderson, president and vice-chancellor, USMC (chair); Ann Dooley, Celtic studies, SMC; Domenico Pietropaolo, Italian studies, SMC; Yves Roberge, principal, New College, U of T; Sandy Welsh, acting vice-dean (teaching and learning), Faculty of Arts & Science, U of T; and Cheryl Regehr, vice-provost (academic programs), U of T; and Jonathan Bengtson, director, John M. Kelly Library, PIMS Library and Archives, USMC; Damon Chevrier, registrar, SMC; and Stefan Slovak, undergraduate student, SMC.

The committee welcomes comments and nominations from interested persons. These should be sent by Jan. 31 to Debra Matthews, executive assistant to the president, Founders House, 1 Elmsley Place; email, usmc.presidentsoffice@utoronto.ca.

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"THE DESIGN OF PHOTOSYNTHESIS"

Monday, January 31, 2011

"PHOTOSYNTHETIC LIGHT-HARVESTING AND PHOTOPROTECTION"

Tuesday, February 1, 2011

"FUELS BY PHOTOSYNTHESIS"

Wednesday, February 2, 2011

Lectures take place at 4 p.m. in LM 159, Lash Miller Chemical Laboratories 80 St. George Street, Toronto

Teachable Moments

NASA news conference becomes a tool to help students understand how science really works

By Mike Reid

Excitement in the astronomical community had been brewing for days. NASA had announced that they would soon reveal new findings that would alter the prospects of finding extraterrestrial life. Although science pundits across the Internet imagined that a signal had been received from an alien civilization, more informed speculation centred on the discovery of a new form of terrestrial life. We would find out at a NASA press conference Dec. 3.

This news triggered a torrent of emails from my Astronomy 101 students. They wanted to know whether I had any inside information about the NASA announcement and, better yet, would we be discussing it in class?

Can you talk about this in class? It's a question students often ask me, usually in reference to stories currently in the news. In a small seminar course, it's relatively easy to adjust the curriculum on the fly to follow the students' interests. In large courses like Astronomy 101, which has 1,300 students and many synchronized components, adjusting the curriculum dynamically is much more challenging. By the time I started receiving emails about the NASA announcement, the course was nearing its end and big changes were not in the cards. Fun as it might have been, I thought, I didn't have time to be spontaneous.

Then I looked up the time of the press conference. When I saw it, I laughed. NASA, it turned out, was going to be making a big announcement relating to alien life at the same time as my Astronomy 101 lecture on the same topic. Bingo!

When I first started teaching in a university, despite my best intentions, I wound up adopting the "default" teaching paradigm: I, as the teacher, would teach and they, as the students, would learn. Like most faculty, I quickly learned that this paradigm doesn't work well in practice, that merely reciting facts does not guarantee that students will understand or remember them. Study after study has shown that "being taught" is far from synonymous with "learning."

Astronomy is full of examples of teaching that does not produce real understanding. Many of the examples concern attempts to dispel commonly held misconceptions. A classic example, documented in the 1987 film *A Private Universe*, concerns the seasons. In the film, new Harvard graduates are asked



to explain the cause of the seasons. Many of them confidently assert that the seasons are caused by the changing distance between the Earth and the sun — farther in winter and nearer in summer. The explanation is rational enough but it doesn't agree with the facts. Many first-year astronomy instructors have had the disheartening experience of carefully explaining the true cause of the seasons — the tilt of Earth's rotation axis — only to have the students confidently reproduce their pre-existing misconceptions on the final exam. Learning, we discover, does not automatically result from teaching.

Like many of my colleagues who have adopted modern teaching techniques, such as problem-based learning and inquiry methods, I have come to see the teacher-centred paradigm as a real obstacle to learning. Understanding simply cannot be pumped into brains like gas into a tank. Passive learning through lectures is not particularly effective and, even when it is, learned information is poorly retained. Still, for a host of practical purposes, lectures remain the dominant mode of university teaching. But if lectures are so ineffective, why bother with them? What good do they serve? My own belief is that one of the chief goals of lecturing must be to inspire students to *learn for themselves*.

The NASA press conference started streaming live on the web at 2 p.m.

I showed up at Convocation Hall and put the live feed up on the main screen. Just in case, I also queued up the PowerPoint slides I'd intended to show. I explained the situation to my students: NASA was *at this very moment* making an announcement concerning the discovery of some new type of life. We would forgo our planned lecture on astrobiology to hear what NASA had to say. I turned on the audio for the live feed and we watched together.

Students have a lot of misconceptions about how science works. They tend to believe that science entails the discovery of immutable laws of nature and their permanent inscription on stone tablets, which are then photocopied to produce first-year textbooks. This is partly the fault of scientists, who toss around terms like "law" too casually. It's been about a century since Einstein showed that Newton's law of gravity is only approximately correct. Already we know that the successor to Newton's law, Einstein's general theory of relativity, itself falls short of fully explaining

gravity. Yet still we teach students about Newton's "law" of gravity. It's no wonder they are confused.

"Science," I had tried to impress upon my students earlier in the semester, "is both provisional and progressive. Many of the things we call laws today will need revision tomorrow in light of new evidence." I could tell they weren't getting it. Students often interpret the

provisional nature of science too strongly, assuming that it means that all current science is simply conjecture. Perhaps the best way to show students how science actually works is to get them to *do* some science of their own, to go through the steps of the cycle of science, but that's difficult in a large class with no laboratory component. Still, the pedagogical difficulties don't diminish the importance of the point: if I can get my students to understand how science *works* they'll be able to perform that beautiful miracle of *teaching themselves*.

With that in mind, I waited until NASA's major announcement had been made and then flipped to my prepared slides. I had written that all known forms of life follow the same basic biochemical pattern.

This statement, I was able to demonstrate, was now incorrect. The new findings concerned a bacterium that had found a novel way to make DNA, substituting arsenic for phosphorus. Life, it turned out, was not all based on the same biochemical blueprint. Science had *progressed* and, best of all, it had done *it right before their eyes*.

I alternated between the press conference and my slides for about half an hour, indicating all the places where my slides would need revision in light of the new findings. The students were able to see that the required revisions, while important, didn't entail the wholesale abandonment of the existing models. I could not have hoped for a better case study, nor one that would leave as lasting an impression.

After the lecture, I was swarmed by students with still more questions. Many of them went home and did their own follow-up research, posting the results to the Astronomy 101 online discussion board. The story of this discovery, it emerged, was less cut-and-dry than the NASA press conference had made it seem. There were disagreements. Methodologies were called into question. There was genuine debate. It was science, and finally all my students were seeing it live in action.

Would I repeat this experience? Certainly, if a good opportunity arose. The circumstances may have been unique but I've bookmarked NASA's news feed just in case.

Mike Reid is an assistant professor in the Department of Astronomy and Astrophysics.